

TECHNICAL PROPERTIES OF PA6

08/2010

Property	Unit	Test method	Condition of specimen	PA 6	
MECHANICAL PROPERTIES					
Tensile strength at break	MPa	ISO 527	dry	80	
	MPa	ISO 527	moist	50	
Elongation at break	%	ISO 527	dry	50-100	
	%	ISO 527	moist	200	
Modulus of elasticity in tension	MPa	ISO 527	dry	3000	
	MPa	ISO 527	moist	1500	
Charpy impact strength	+ 23°C	ISO 179/1eU	dry	no break	
	- 40°C		dry	no break	
Charpy notched impact strength	kJ/m²	ISO 179/1eA	dry	70	
	kJ/m²		moist		
Hardness shore scale D		ISO 868	dry	75	
Time yield limit $\sigma_{1/1000}$	23°C/50% RH	MPa	ISO 899	moist	5,5
	100°	MPa	ISO 899	dry	2,5
Apparent modulus $E_{C/1000, 20}$	23°C/50% RH	MPa	ISO 899	moist	230
THERMAL PROPERTIES					
Heat distortion temperature,	Method A	°C	ISO 75	dry	55-75
	Method B	°C	ISO 75	dry	> 160
Melting point	Method A	°C	ISO 3146	-	220
Maximum service temperature for few hours operation		°C	- -	-	≤ 180
TEP 5 000 hours (50% of tensile strength) ¹⁾		°C	IEC 216	-	90
TEP 20 000 hours (50% of tensile strength) ¹⁾		°C	IEC 216	-	75
Thermal coefficient of linear expansion		1/K.10 ⁻⁶	DIN 53452	dry	7-10
Thermal conductivity	Method A	W/(K.m)		dry	0,23
Specific heat capacity		J/(g.K)	IEC 1006	dry	1,7
DIELECTRIC PROPERTIES					
Dielectric constant	1 MHz	-	IEC 250	dry	3,5
		-	IEC 250	moist	7
Dissipation factor tan δ	1 MHz	-	IEC 250	dry	0,023
		-	IEC 250	moist	0,3
Dielectric strength		KV/mm	IEC 243	dry	100
		KV/mm	IEC 243	moist	60
Volume resistivity		Ω.cm	IEC 93	dry	10 ¹⁵
		Ω.cm	IEC 93	moist	10 ¹²
Surface resistivity R _{0A}		Ω	IEC 93	dry	10 ¹³
		Ω	IEC 93	moist	10 ¹⁰
Resistance to tracking	KA/ KB method	-	IEC 112	dry/moist	KB > 600
	KC method	-	IEC 112	dry/moist	KC > 600
MISCELLANEOUS PROPERTIES					
Mass density	Method D, E	g/cm³	ISO 1183	dry	1,13-1,15
Moisture absorption at 23°C, 50% RH	Saturation	%	ISO 1110	-	3,0 ± 0,4
Water absorption at 23 °C	Saturation	%	ISO 62	-	8,0 ± 0,5
Fire performance	Flameability Acc. VDE		VDE 0304	dry	II b
	Flameability of interior materials in passanger cars h>1mm	mm/min	FMVSS 302	moist	< 100
	Flameability according UL Standard (thickness of specimen 1,6 mm)	-	UL 94	-	HB
Resistance to wear ²⁾		µm/km	ISO 7148-2	dry	

1. Datas of resin only
2. Made by a pin / rotating disc test according DIN-ISO 7148-2 under following conditions: $R_a = 0,35 - 0,45 \mu\text{m}$ (steel disc), $v = 0,3 \text{ m/s}$, $p = 3 \text{ N/mm}^2$, time $T > 16\text{h}$

All statements, technical information and recommendations contained in this brochure are presented in good faith, but all information given is without warranty and liability.